

PEER REVIEW HISTORY

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ARTICLE DETAILS

TITLE (PROVISIONAL)	To burnout or not to burnout. A cross-sectional study in healthcare professionals in Spain during COVID-19 pandemic.
AUTHORS	Torrente, Maria; Sousa, Pedro; Sánchez-Ramos, Ana; Pimentao, Joao; Royuela, Ana; Franco, Fabio; Collazo-Lorduy, Ana; Menasalvas, Ernestina; Provencio, Mariano

VERSION 1 – REVIEW

REVIEWER	Yen-Yuan Chen National Taiwan University Taiwan
REVIEW RETURNED	10-Oct-2020

GENERAL COMMENTS	<p>This study was pretty interesting, and made the readers to understand prevalence of burnout syndrome and the factors associated with burnout syndrome in health care workers. However, there are some insufficiencies which obscures strengths of the study. I tried to propose some suggestions about how this study could be further polished:</p> <ol style="list-style-type: none">1. Burnout syndrome may be associated with different workplace settings. For example, healthcare workers working in medical ICU for COVID-19 patients may be different from those working in the outpatient clinics for COVID-19 patients. Although the authors used “FL” (frontline), I suggest the authors define “FL” or present a subgroup analysis to distinguish the difference between FL healthcare workers working in different settings.2. Similarly, the authors reported one of the research objectives as to evaluating the difference between professionals working in the FL versus those working in their usual wards. However, huge diversity about burnout syndrome exists both in FL and in usual wards. For example, for medical wards, those working in the GI wards may be different from those working in the infection wards. Please try to control these in-ward or in-specialty diversity.3. Factors associated with overestimating or underestimating the prevalence of burnout syndrome should be discussed in Strengths and Limitations which is suggested to be right before Conclusion.4. The responsibility of caring for COVID-19 patients may vary from different level hospitals. The prevalence reported in this study may heavily depend on how many of the participants were from primary care, <300, 300—600, and >600. Introduction about the health care systems in Spain for caring for COVID-19 patients are strongly suggested.
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REVIEWER	Yingchun Zeng The Hong Kong Polytechnic University
REVIEW RETURNED	20-Oct-2020

<p>GENERAL COMMENTS</p>	<p>Thanks for offering this opportunity to review this interesting manuscript, titled as “To burnout or not to burnout. A cross-sectional study in healthcare professionals in Spain during COVID-19 pandemic”. Psychological problems and burnout issues are global concerns of healthcare professionals during the COVID-19 pandemic, lots of studies have documented: The Psychological Impact of the COVID-19 Outbreak on Health Professionals: A Cross-Sectional Study in Italy</p> <p>Sleep Disturbances, Anxiety, and Burnout during the COVID-19 Pandemic: a nationwide cross-sectional study in Brazilian Healthcare Professionals</p> <p>Frontline nurses' burnout, anxiety, depression, and fear statuses and their associated factors during the COVID-19 outbreak in Wuhan, China: A large-scale cross-sectional study</p> <p>In terms of healthcare professionals' burnout issues, existing research has reported as well: Ruiz-Fernández, MD, Ramos-Pichardo, JD, Ibáñez-Masero, O, Cabrera-Troya, J, Carmona-Rega, MI, Ortega-Galán, ÁM. Compassion fatigue, burnout, compassion satisfaction and perceived stress in healthcare professionals during the COVID-19 health crisis in Spain. J Clin Nurs. 2020; 29: 4321–4330. https://doi.org/10.1111/jocn.15469</p> <p>Therefore, this manuscript can provide limited new knowledge in this field and needs more intervention studies to reduce burnout issues of healthcare professional globally.</p>
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VERSION 1 – AUTHOR RESPONSE

Reviewer: 1

Comments to the Author

This study was pretty interesting, and made the readers to understand prevalence of burnout syndrome and the factors associated with burnout syndrome in health care workers. However, there are some insufficiencies which obscures strengths of the study. I tried to propose some suggestions about how this study could be further polished:

1. Burnout syndrome may be associated with different workplace settings. For example, healthcare workers working in medical ICU for COVID-19 patients may be different from those working in the outpatient clinics for COVID-19 patients. Although the authors used “FL” (frontline), I suggest the authors define “FL” or present a subgroup analysis to distinguish the difference between FL healthcare workers working in different settings.

Following the reviewer’s suggestion, firstly, we have included a definition of frontline (FL) in order to clarify the role of these workers in the introduction (page 3):

“This critical situation was faced by healthcare workers on the COVID-19 frontline (FL), who were directly involved in the treatment, diagnosis and care of patients with SARS-CoV-2, who responded with a display of selflessness, caring for patients despite the risk of infection.”

And secondly, given that the survey asked the participants not only about working on the FL or usual position, but also their specialty, we were able to analyse the attitude toward COVID-19 taking into account the participant’s specialty, as shown in Table 1.

63% were medical specialties (these include, Cardiology, Respiratory Medicine, Intensive Care, or Medical Oncology, among others), 20% Emergency services (EMS) and 13% surgical specialty (4% were left unspecified). Of these, EMS were mainly working at the Emergency Room (ER), which was

considered FL as these workers were directly involved in the diagnosis and management of patients positive in SARS-CoV-2. Of note, most of the patients in this period visiting the ER were COVID-19 patients. Both Medical and Surgical specialties were divided almost equally between FL and usual position. It has to be taken into account that hospitals dedicated most of their beds to COVID-19 patients, given the overflow of these patients, but also maintained COVID-19 free wards in order to attend the usual diseases.

In these cases, FL involved also treatment and care of COVID-19 patients, but in the wards dedicated to these patients, which were separated from the non-COVID-19 wards. Interestingly, when analysing the attitude toward COVID-19 (Table 2 and Results section), the specialty was one of the factors with no statistical significance.

2. Similarly, the authors reported one of the research objectives as to evaluating the difference between professionals working in the FL versus those working in their usual wards. However, huge diversity about burnout syndrome exists both in FL and in usual wards. For example, for medical wards, those working in the GI wards may be different from those working in the infection wards. Please try to control this in-ward or in-specialty diversity.

We appreciate the insightful comment. Nevertheless, and as described in the Results section and in Tables 2, 4 and 5, when analysing attitude of healthcare workers toward COVID-19 and the factors associated with Burnout syndrome, although there is statistical difference between working on FL or usual Ward, no statistical difference was observed between the different specialties. In addition, the specialty wasn't found as a factor associated to Burnout, in the univariate analysis nor in the multivariate analysis. Other factors such as occupation (doctor or nurse), age or sex were the ones who were found associated to Burnout syndrome. This may be due to the fact that all specialties involved in the care of COVID-19 patients had similar pressure or working conditions, as all scenarios (ICU, ER or COVID-19 wards) involved treatment and care of these patients, use of individual protection garment, exposure to stressing conditions, or high risk of infection.

3. Factors associated with overestimating or underestimating the prevalence of burnout syndrome should be discussed in Strengths and Limitations, which is suggested to be right before Conclusion. According to the reviewer's suggestion, these factors have been discussed in the corresponding subsection within the discussion (page 13).

4. The responsibility of caring for COVID-19 patients may vary from different level hospitals. The prevalence reported in this study may heavily depend on how many of the participants were from primary care, <300, 300—600, and >600. Introduction about the health care systems in Spain for caring for COVID-19 patients are strongly suggested.

In line with the reviewer's comment, the following introduction on Spanish healthcare system has been included in the Discussion (page 10) in the main text, in order to clarify the results regarding the type of hospital and how this may affect the prevalence of burnout.

"The COVID-19 pandemic has severely tested the Spanish health system resilience and pandemic preparedness. Despite Spain's image being one of the healthiest nations in the world, having a robust universal health care system and the highest life expectancy in the European Union, the Spanish health system was already fragile when it was overwhelmed by COVID-19 in March, after a decade of austerity that followed the 2008 financial crisis, which left health services understaffed, under-resourced, and under strain.

The creation in 2004 of a Centre for Coordination of Health Alerts and Emergency, and the tightly calculated design of the Spanish health care system were supposed to ensure that threatening illnesses were quickly detected and treated. Nevertheless, the pandemic laid bare the country's poor coordination among central and regional authorities, the weak surveillance systems and scarcity of personal protective equipment and critical care equipment, or an ageing population, among other problems.

With as many as 65,000 healthcare workers infected, health facilities in the worst affected regions such as Madrid or Catalonia were struggling, with inadequate intensive care capacity and an insufficient number of ventilators in particular. Even tertiary hospitals (with over 600 beds of capacity)

cancelled non-emergency surgeries and cleared beds where possible. Policies at health care centres were modified in order to take some of the burden off hospitals, specialist referrals, but the steady stream of patients has made them a primary source of infection. As a result, there were hardly any open consultation hours, which in turn lead to many undiagnosed diseases.

While hospitals in northern Europe are smaller and well distributed among the population, in Spain they are concentrated in the large cities. In rural areas, there is a shortage, and the hospitals available are small (under 300 beds of capacity). On top of this, Spain has just under 10 intensive care beds per 100,000 inhabitants.”

Reviewer: 2

Comments to the Author

Thanks for offering this opportunity to review this interesting manuscript, titled as “To burnout or not to burnout. A cross-sectional study in healthcare professionals in Spain during COVID-19 pandemic”.

Psychological problems and burnout issues are global concerns of healthcare professionals during the COVID-19 pandemic, lots of studies have documented:

1. The Psychological Impact of the COVID-19 Outbreak on Health Professionals: A Cross-Sectional Study in Italy
2. Sleep Disturbances, Anxiety, and Burnout during the COVID-19 Pandemic: a nationwide cross-sectional study in Brazilian Healthcare Professionals
3. Frontline nurses' burnout, anxiety, depression, and fear statuses and their associated factors during the COVID-19 outbreak in Wuhan, China: A large-scale cross-sectional study
4. In terms of healthcare professionals' burnout issues, existing research has reported as well: Ruiz-Fernández, MD, Ramos-Pichardo, JD, Ibáñez-Masero, O, Cabrera-Troya, J, Carmona-Rega, MI, Ortega-Galán, ÁM. Compassion fatigue, burnout, compassion satisfaction and perceived stress in healthcare professionals during the COVID-19 health crisis in Spain. *J Clin Nurs.* 2020; 29: 4321–4330. <https://doi.org/10.1111/jocn.15469>

Therefore, this manuscript can provide limited new knowledge in this field and needs more intervention studies to reduce burnout issues of healthcare professional globally.

We appreciate the insightful remarks of the reviewer. In line with these remarks, we would like to stress the importance of these kind of studies, as the one presented in this manuscript, to better understand the magnitude of the impact of the current pandemic in the population and why further and numerous studies of different nature are still very much needed.

The main goal of our study was to evaluate the burnout prevalence of healthcare professionals in Spain during COVID-19 pandemic and evaluate the differences between professionals working on the FL versus those working in their usual wards. Secondly, we aimed at comparing burnout proportions between working on the FL versus working at the usual ward, and finally compared the prevalence of Burnout syndrome during COVID-19 pandemic and pre-COVID-19 pandemic.

These analyses were aimed at evaluating the mental health conditions of the Spanish healthcare workers pre and during pandemic, and detect any differences between working in the FL or not, in order to evaluate the impact and subsequently, be able to elaborate interventions that will improve healthcare workers conditions.

After revising the four different references suggested by the reviewer, allow us to comment on their different aspects and why our study will definitely enrich and give additional value to their knowledge.

The first study evaluates the psychological impact of COVID-19 pandemic through an online survey measured with different scales and scores (STAI-S for anxiety, DASS for psychological distress, and IES-6 for post-traumatic symptoms evaluation) apart from the Maslach Burnout Inventory.

Our study evaluated burnout prevalence prepandemic and during pandemic in different healthcare professionals. We used Maslach Burnout inventory, and in order to evaluate attitude toward COVID-19 we used a specific questionnaire based on the pandemic impact, instead of general psychology scores.

Despite theirs being a very complete psychological evaluation, the sample size was reduced (330 health professionals) and from three main hospitals in Lombardy and Piedmont (Northern Italy), the

regions with the higher transmission rates and mortality in Italy, which may lead to some bias due to the similarity of the hospitals and being on the same region. Related to this study, ours has several strengths such as the larger sample size, covering the national territory and including healthcare professionals from different types of hospitals and primary care centres. The majority of participants, nevertheless, were from Madrid community, Spain's epicentre of the pandemic, but also the community with largest hospitals and highest density of population in the country.

Study number two suggested by the reviewer studied the sleep disturbances, anxiety, and burnout of 4,384 Brazilian health professionals from all regions of the country. Although their results on burnout syndrome were low, they observed a huge burden of insomnia in healthcare professionals during the COVID-19 pandemic. This study was indeed of great relevance due to the big sample size, but only evaluated burnout and sleeping disorders during pandemic, not pre-pandemic, so there is no way of knowing if healthcare workers were already suffering from any of these disorders before. Yet, these results are of great importance in order to assist in the treatment of healthcare workers regarding these disorders.

The third study focused in the assessment of the mental health status during COVID-19 outbreak in 2,014 frontline nurses working in two hospitals in Wuhan, China, the pandemic's epicentre. Results described a high level of burnout and fear and a prevalence of anxiety, depression and skin lesions positively correlated with mental health outcomes, but also a strong willingness of working in the frontline. This study is indeed very representative given its location and its big sample size, but it is only limited to describing the mental health condition of nurses.

The fourth study assessed compassion fatigue, burnout, compassion satisfaction and perceived stress in 506 healthcare professionals (physicians and nurses) who were working in healthcare centres during the COVID-19 pandemic in Spain, with the Professional Quality of Life Questionnaire, and with the Perceived Stress Scale-14 through an online survey. Results suggest moderate or high levels of burnout in healthcare professionals, irrespective of the health crisis caused by the COVID-19 pandemic.

This last study is similar to ours in terms of sample size, national coverage, and occupation. Of important note, the results regarding burnout syndrome prevalence are similar to ours. Nevertheless, there is a lack of information regarding the participant's location or type of hospital. Also, we find the comparison made in our study on burnout prevalence and attitude toward COVID-19 between healthcare professionals working in the frontline and their usual wards of utter importance, as well as the differences between specialties or type of hospital, given the regional differences in Spain regarding clinical protocols or restrictive measures or testing procedures, that have existed within the Spanish National healthcare system during the pandemic.

It is for all these reasons that we strongly believe our study adds great value to the already published study, as the need of improvement of the healthcare workers conditions at work is breathtakingly evident, so the more information we have on their mental health conditions, taking into account factors associated with burnout, the burnout prevalence pre and post pandemic, and their attitude toward COVID-19 would definitely help health authorities worldwide to provide healthcare workers with the tools they need to work in a safe environment, reduce pressure and improve their wellbeing.

VERSION 2 – REVIEW

REVIEWER	Yen-Yuan Chen Graduate Institute of Medical Education and Bioethics, National Taiwan University College of Medicine, Taiwan
REVIEW RETURNED	01-Jan-2021
GENERAL COMMENTS	My suggestions have mostly been followed. I have no further concerns.